

FISHES OF KOLHAPUR

BY

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(*With a map and two text figures*)

INTRODUCTION

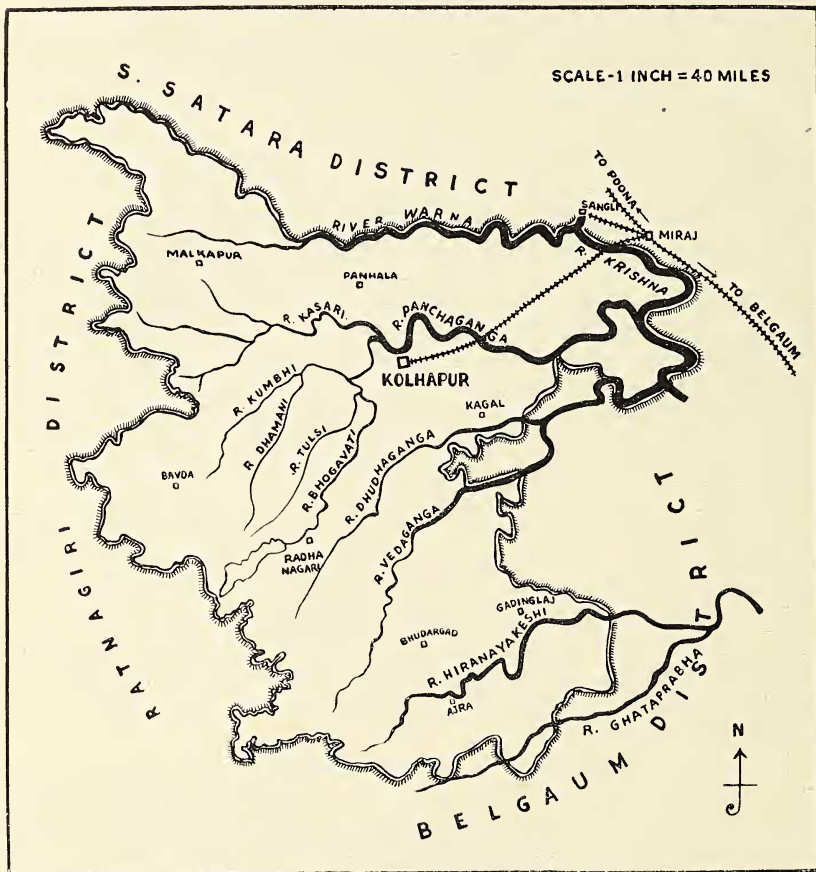
Very little is at present known about the fresh water fish fauna of Kolhapur District. The official gazetteer of the erstwhile Kolhapur State edited by Campbell (1886) contains only a few local names of fishes and a sketchy account of impressions about the 'Fisheries' as it was understood at that time. Campbell stated that the fisheries of the State (now the Kolhapur District) were of little importance. In making this statement, however, he appeared to have overlooked the vast potentialities of fresh water resources which have improved considerably during the last decade on account of the construction of new reservoirs and weirs across small rivers. Unfortunately, even the recent work on regional survey of Economic Resources, India, Kolhapur (Patil, 1950) has no mention of fisheries.

During the course of a survey of fresh water resources for the development of Inland Fisheries, efforts were directed to find a local source of supply of fish seed. Survey of sheets of water near Kolhapur indicated the availability of young ones of *Labeo fimbriatus* a fish locally known as 'Tambir', in large quantity. Presence of suitable tanks and reservoirs in this region brightened the scope for developing freshwater fisheries. In view of the aforesaid prospects of developing fisheries, a freshwater fisheries station was established by the Government of Bombay in 1951.

In this article, however, it is not intended to discuss the fisheries as an industry but only to record the fish fauna occurring in the waters of Kolhapur District. The need for such a check-list of fishes occurring in this area has long been felt, particularly in view of the prospects of developing fisheries in this part of the Deccan and the zoo-geographical significance (Kulkarni, 1951) of some of the species found in this region.

The district of Kolhapur is a part of the western Deccan Plateau lying along the eastern side of the Western Ghats. This district is bounded on the north by South Satara District, on the west by Ratnagiri District and on the south and east by Belgaum District. The physical features are of a varied nature consisting of plains, plateaus and hill ranges. Kolhapur District is traversed on the west by the long range of the Western Ghats which has thrown out several

spurs in the east. The high altitude of these ranges and their copious rainfall have given rise to a number of streams and rivers which have formed small and large valleys. The drainage of the District is north-eastwardly and flows into the river Krishna. The important rivers of Kolhapur District are six in number, the Warna, Panchaganga, Dudhganga, Vedaganga, Hiranayakeshi and Ghataprabha. These rivers, which rise in the Western Ghats and flow south-east and north-east across the Kolhapur plateau towards the Krishna, have generally steep



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banks and soft with either clayey or rocky beds of varying depths. In the course of the first few miles of their course before they pass out of the mountainous terrain, the rivers are fed by numerous streams. Topographically the area covered by the District can roughly be divided into two zones marked by broad climatic differences (i) the western mountainous tract covered by the Western Ghats and its spurs, with valleys running in between the spurs, and (ii) the main

eastern plain. The elevation above sea level in the hilly west varies from 1850 ft. in the valleys to 3,000 ft. on the crest of Western Ghats. The elevation in the eastern plains varies from 1,800 to 1,900 ft. above sea level. Like the rest of the western Deccan, the climate of the District, being under the influence of the sea breeze, is mild and temperate. The range of temperature between the maximum and minimum is comparatively small. The maximum temperature in the hot season seldom rises above 100°F. and the minimum in the cold season rarely falls below 55°F., except at Kolhapur where it is sometimes 48°F.

Like the western districts of the Bombay Deccan, Kolhapur District receives its rain mainly from mid-June to December; the greater part of the rainfall, supplied by the south-west monsoon, is received from mid-June to mid-October. From about mid-October the eastern part of the District gets showers of the north-east monsoon. The rainfall varies according to altitude; the higher altitudes in the north get more rain than the comparatively lower altitudes in the south. The variations in the rainfall from west to east, however, are very marked. Bavda region in the western tracts gets 277 inches, whereas Kolhapur, Hatkalangde and Shirol get only 39, 25 and 23 inches respectively.

Kolhapur District is plentifully supplied with water from quite a number of rivers, streams, natural lakes, irrigation tanks, reservoirs and perennial ponds. The numerous streams offer many sites suitable for dams and weirs. With the implementation of several new irrigation development schemes which have a direct or indirect bearing on fisheries, pisciculture is bound to gain more importance in this region.

Most of the collection of fish specimens was done in the river Panchaganga from Prayag, about three miles west of Kolhapur, to village Valivde about nine miles east of Kolhapur. The five streams, Tulsī, Kasari, Bhogavati, Bramhi and Kumbhi unite to form the Panchaganga at Prayag. The aforesaid tributaries of the Panchaganga rise in the Western Ghats and flow through a hilly tract before they unite to form the Panchaganga. Due to the construction of weirs on the Panchaganga, a considerable quantity of water is retained in the river, thereby affording suitable habitat for a large number of fish. Further, when the tributaries of this river become shallow after monsoon, fishes from these tributaries also migrate into the Panchaganga for shelter and forage. The part of the river Panchaganga between Prayag and the village Valivde forms a stretch of about 12 miles. The banks and the bed in the aforesaid portion of the river are rocky, sandy and at some places muddy. This portion of the river also has large deep pools where additional water is retained by means of construction of weirs near Kolhapur and Valivde village. When the sluice gates of the weirs are opened before the commencement of the monsoon, the river runs with a terrific turmoil. Hence the collection in the river Panchaganga made at different times of the year represents fish fauna of varied nature including bottom dwelling forms in swift as well as stationary waters. The list of the fishes collected by us is given below with both scientific and local Marathi names.

No.	Scientific names.	Local Marathi names.
	Order : OPISTHOMI. Family : MASTACEMBELIDAE.	
1.	<i>Mastacembelus armatus</i> (Lacep.)	... Vam, Vambat.
	Order : APODES. Family : ANGUILLIDAE.	
2.	<i>Anguilla anguilla</i> (Ham.)	... Aheer.
	Order : EVENTOGNATHI. Family : CYPRINIDAE. Sub-family : Abramidinae.	
3.	<i>Chela clupeoides</i> (Bl.)	... Vadashi.
4.	<i>Chela phulo</i> (Ham.)	... Alkut.
	Sub-family : Rasborinae.	
5.	<i>Barilius bendelisis</i> (Ham.)	... Jhorya.
6.	<i>Barilius evezardi</i> (Day)	... Jhorya.
7.	<i>Perilampus atpar</i> (Ham.)	... Sonukli.
8.	<i>Danio aequipinnatus</i> (McClelland)	... Balooki.
9.	<i>Brachy-danio vario</i> (Ham.)
10.	<i>Rasbora daniconius</i> (Ham.)	... Dandai.
	Sub-family : Cyprininae.	
11.	<i>Aspidoparia morar</i> (Ham.)	... Amlee.
12.	<i>Balitora shimogensis</i>	... Phattar chittu.
13.	<i>Puntius amphibijs</i> (C. & V.)	... Khavli.
14.	<i>Puntius dobsoni</i> (Day)	... Parag.
15.	<i>Puntius kolus</i> (Sykes)	... Kolshi.
16.	<i>Puntius melanostigma</i> (Day)
17.	<i>Puntius stigma</i> (C. & V.)
18.	<i>Puntius sarana</i> (Ham.)	... Khavli.
19.	<i>Puntius ticto</i> (Ham.)
20.	<i>Puntius (tor) khudree</i> (Sykes)	... Mhasheer.
21.	<i>Puntius (tor) mussullah</i> (Sykes)
22.	<i>Puntius fraseri</i> (Hora & Misra)	... Kadwi.
23.	<i>Cirrhina fulunjee</i> (Sykes)	... Mulicha ganna.
24.	<i>Cirrhina reba</i> (Ham.)
25.	* <i>Cirrhina mrigala</i> (Ham.)
26.	<i>Garra mullya</i> (Sykes)	... Mallya.
27.	<i>Garra bicornuta</i> (Rao)

* Exotic fish introduced in Kolhapur waters.

No.	Scientific names	Local Marathi names.
28.	<i>Labeo boggut</i> (Sykes)	... Sandasi, Sandas.
29.	<i>Labeo fimbriatus</i> (Bl.)	... Tambir.
30.	<i>Labeo calbasu</i> (Ham.)	... Kanas.
31.	<i>Labeo porcellus</i> (Heckel)	... Tambudki.
32.	<i>Labeo bata</i> (Ham.)	... Tambti.
33.	* <i>Labeo rohita</i> (Ham.)
34.	* <i>Catla catla</i> (Ham.)
35.	<i>Rohitee cotio</i> (Ham.)	... Bhongi.
36.	<i>Rohitee vigorsii</i> (Sykes)	... Phankut.
37.	<i>Rohitee ogilbii</i> (Sykes)	... Vatani.
38.	<i>Schizmatorhynchus (Nukta) nukta</i> (Sykes)	... Nakata.
Family : COBITIDAE.		
39.	<i>Lepidocephalichthys guntea</i> (Ham.)	... Mori.
40.	<i>Lepidocephalichthys thermalis</i> (C. & V.)	... "
41.	<i>Nemachilichthys ruppelli</i> (Sykes)	... Chikli.
42.	<i>Nemachilus denisonii</i> (Day)	... Murunga.
43.	<i>Nemachilus botius</i> (Ham.)	... Chikli.
44.	<i>Nemachilus</i> sp. ?	... Chikli.
45.	<i>Botia striata</i> var. <i>kolhapurensis</i> nov.	... Waghamsa.
Order : NEMATHOGNATHII.		
Family : SILURIDAE.		
46.	<i>Ompok bimaculatus</i> (Bl.)	... Wanz
47.	<i>Ompok pabo</i> (Ham.)	... Kaliwanz.
48.	<i>Wallago attu</i> (Bl.)	... Valashivda.
Family : BAGRIDAE.		
49.	<i>Mystus cavasius</i> (Ham.)	... Katirna.
50.	<i>Mystus seenghala</i> (Sykes)	... Singalu.
51.	<i>Mystus malabaricus</i> (Jerdon)	... Shingti.
52.	<i>Mystus aor</i> (Ham.)	... Singalu.
53.	<i>Rita hastata</i> (Val.)	... Kurdu.
54.	<i>Rita pavementata</i> (Val.)	... Ghoghrya.
Family : SISORIDAE.		
55.	<i>Bagarius bagarius</i> (Ham.)	... Khirit.
56.	<i>Gagata itchkea</i> (Sykes)	... Itchka.
57.	<i>Glyptothorax lonah</i> (Sykes).	... Phattachittu.
58.	<i>Glyptothorax annandalei</i> (Hora)	... Phattarchatu.

* Exotic fish introduced in Kolhapur waters.

No.	Scientific names.	Local Marathi names.
Family : SCHILBEIDAE.		
59.	<i>Proeutropichthys taakree</i> (Sykes)	... Munvi, Vyadi.
60.	<i>Neotropius khavalchor</i> Kulkarni	... Khavalchor.
61.	<i>Pseudotropius atherinoides</i> (Bl.)	... Sura.
Order : CYPRINODONTES.		
Family : CYPRINODONTIDAE.		
62.	<i>Aplochilus lineatus</i> (C. & V.)
Order : SYNENTOGNATHI.		
Family : XENENTODONTIDAE.		
63.	<i>Xenentodon caecila</i>	... Tokali.
Order : LABYRINTHICI.		
Family : OPHICEPHALIDAE.		
64.	<i>Chana gachua</i> (Ham.)	... Dokrya.
65.	<i>Chana leucopunctatus</i> (Sykes)	... Kalamasa, Murrel.
66.	<i>Chana marulius</i> (Ham.)	... Kalamasa, Murrel.
67.	<i>Chana striatus</i> (Bl.)	... Mhangsha.
68.	* <i>Osphronemus goramy</i> (Lacep.)
Order : PERCOMORPHI.		
Family : AMBASSIDAE.		
69.	<i>Ambassis ranga</i> (Ham.)	... Kachki, Chembardi.
70.	<i>Ambassis nama</i> (Ham.)	... Kachki, Chembardi.
Order : GOBIOIDEA.		
Family : GOBIIDAE.		
71.	<i>Glossogobius giuris</i> (Ham.)	... Kharpya.

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SYSTEMATIC ACCOUNT

Chela clupeoides (Bloch)

In his account of *Chela clupeoides* Day has stated that as a rule the number of rays in the anal fin vary from 13-15 (2/11-13) but in the specimens from Deccan he found them to be 2/13-15. In the specimens collected at Kolhapur the number of rays in the anal fin is 17.

Colour—Day in his account has described the coloration as silvery but has not mentioned about a distinct row, sometimes two rows, of about 8-10 black dots on each side as found in the specimens collected at Kolhapur.

Size—Day has stated that this species attains at least six inches in length. The largest size of *C. clupeoides* found at Kolhapur measured 9.5".

Brachy-danio rerio (Ham.)

In the specimens of *Brachy-danio rerio* collected at Kolhapur, dorsal does not commence opposite the anal as described by Day but it is slightly anterior to anal. Number of rays in the anal fin of the aforesaid specimens is 13-14 (2-3/11) instead of 15 to 16 as described by Day.

Balitora shimogensis Silas & Kalawar

This new species of Homalopterid fish is discovered by E. G. Silas and A. G. Kalawar almost simultaneously near Shimoga in Mysore State and near Kolhapur in Bombay State. The diagnostic characters and other details about the fish will be published elsewhere.

Occurrence of this fish in Kolhapur and its zoo-geographical significance have been recorded (Kulkarni 1951).

Barbus fraseri Hora & Misra

D. 2/8; P. 12; V. 9; A. 3/5; C. 19; L. 1. 43-47.

This fish was described as a new species from Deolali, Nasik District, by Hora and Misra when they commented on the collection made by Dr. Fraser. The description was based only on very few specimens and that too of only females. As males were collected for the first time only in the present collection, it is considered desirable to furnish a brief description of the fish.

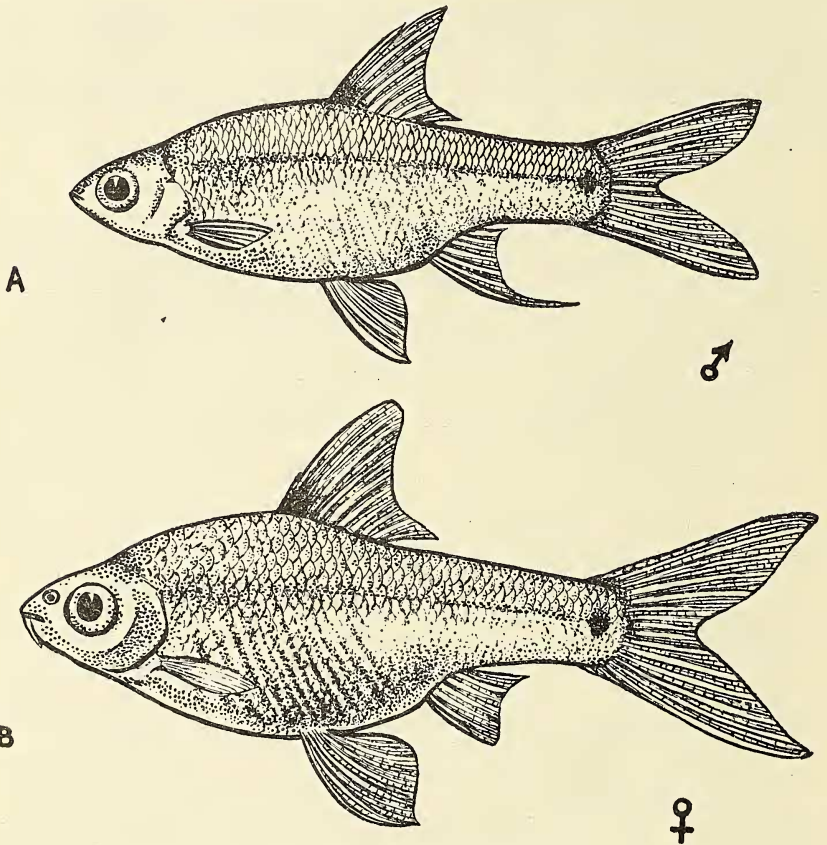
This species of *Barbus* has a graceful form with a slightly compressed body and its dorsal profile slightly more convex than the ventral. Abdomen is rounded. Head is small and somewhat depressed. Mouth is small, crescentic, opening forwards inferiorly. Lips are fleshy and continuous at the angle of the mouth. Length of the head is 5.2 in total length and 3.9 in standard length. Height of the body is 3.5 to 4.1 in total length. Inter-orbital space is slightly convex and smooth.

The eyes are prominent and without adipose lids. They are situated on the lateral margin of the head so that half of diameter can be seen in the dorsal aspect and the other half in the ventral aspect. Eyes are situated nearer the snout in the length of the head. Their diameter is contained three times in the length of the head, $\frac{3}{4}$ times in the length of the snout, and is almost equal to the inter-orbital space.

There are two short maxillary barbels situated at the angle of the mouth. Lateral line is incomplete and extends to about 6-9 scales. There are 42-47 scales along the lateral line and 7-8 rows of scales

between it and the base of the ventral fin. There are 14 series of scales between the base of the dorsal and ventral fin.

Origin of the dorsal fin is almost opposite the ventral, commencing midway between the tip of the snout and the base of the caudal fin. The upper edge of the dorsal is concave and its last undivided ray is osseous and serrated. Dorsal is slightly longer than the head and considerably shorter than the depth of the body. In the case of the male, the last undivided ray of the anal fin is much elongated, while in the female no such elongation of ray is marked.



A. *Barbus fraseri* (male)
B. *Barbus fraseri* (female)

Colour of the body is yellowish olive with a silvery streak on the sides. A faint golden spot is present on the occiput which turns brownish in preserved specimens. A small black spot is present at the base of the commencement of the dorsal fin and another black spot at the base of the caudal.

The female specimens closely resemble *Barbus fraseri* (Hora & Misra, 1938). No reference was made to the distinguishing characters of the male. We have found that the adult males of *Barbus fraseri* have an

elongated anal fin and they are smaller in size as compared with the females of the species. This sexual dimorphism may be regarded as a character to distinguish the sexes. The secondary sexual difference noted above can be made out clearly from a comparison of the drawings of male and female specimens here reproduced.

MEASUREMENTS IN MILLIMETRES

	Sp. 1 ♀	Sp. 2 ♀	Sp. 3 ♂
Total length	46.0	45.0	41.0
Length of the head	9.0	8.5	8.0
Height of the body	13.0	11.0	10.0
Diameter of the eye	3.0	3.0	2.5
Length of the caudal	11.5	11.0	10.0
Height of the dorsal	10.0	9.0	9.0
Length of the pectoral	8.0	7.0	6.0
Length of anal	5.5	5.0	8.0
Length of ventral	6.5	5.5	6.0
Inter-orbital width	3.5	3.0	3.0

***Botia striata* var. *kolhapurensis* nov.**

D. 2/9; P. 2/9-10; V. 1/7; A. 2/5; C. 19.

The body is somewhat compressed laterally and the dorsal profile in front of the dorsal fin is a broad incline, which becomes an abrupt descent from the nostrils to the tip of the snout. The depth of the body is contained $3\frac{1}{2}$ to $3\frac{3}{4}$ times in standard length and $4\frac{1}{2}$ to $4\frac{3}{4}$ times in total length. The depth of the body is almost equal or slightly greater than the length of the head. The length of the head is contained $3\frac{3}{4}$ times in standard length and $4\frac{3}{4}$ times in total length. The head is greatly compressed and its length is nearly equal to the distance between the tip of the snout and the anterior root of the pectoral fin. Width of the head is more than half its own depth but almost half the length of the head. The eyes are of moderate size and their diameter is contained about 4 to $4\frac{1}{4}$ times in length of the head. Diameter of the eye is almost equal or slightly less than the length of the suborbital spines. The spine is bifid at the base. Barbels 8, subequal, the mandibular being the shortest pair. The mouth is crescentic when shut and is an oval aperture when open. The distance between the angles of the mouth when wide opened is equal to the diameter of the orbit. The upper lip overhangs the lower and both are somewhat thick and suctorial.

The dorsal fin arises in front of the origin of the ventral and both are situated nearer the caudal than the tip of the snout. The height of the dorsal fin is slightly greater than the length of the anal and ventral fins respectively. The ventrals are shorter than the anal. The anal possess two simple and five branched rays. The length of the pectoral is more than twice the suborbital spine and is much longer than the snout. The margin of the dorsal fin is entire and that of the caudal is deeply forked. The caudal lobes are of equal length.

The anterior of nostrils is surrounded by a very large glandular fold which covers the posterior nares. The opening of the latter is a wide funnel and that of the former a slit marked by glandular lips of the fold. The lateral line is entire and straight and terminates anteriorly in the upper corner of the gill opening. The scales are absent on the head, operculum and chest. They are small and nondeciduous.

The body is diversified by broad dark brownish green and narrow yellow bands which from behind the nape form slightly oblique hoops directed backwards. These bands do not completely surround the body. The bands fade into the ground colour as they reach the ventral surface. The ground colour is light yellowish. The broad dark bands bear light streaks of variable number forming incomplete hoops. The primary types of dark and yellow bands are broader on the sides of the head and are directed obliquely forwards. The primary yellow bands on the body are broad at the base and become narrow as they reach the dorsal surface. On the upper surface of the head, the dark and yellow streaks form a trident mark. The fins are pale and barred, the caudal bears two entire and one or two interrupted stripes.

The specimens closely resemble *Botia striata* (Rao) but differ from it on the points mentioned below.

	<i>B. striata</i> (kolhapurensis)	<i>B. striata</i> (Rao)
1. Maximum size of the fish ...	57 mm.	95 mm.
2. Pectoral fin ...	11-12	13-14
3. Body profile ...	Abrupt descent from the nostrils	Abrupt descent from the eyes
4. Depth of body in standard length ...	$3\frac{1}{2}$ to $3\frac{3}{4}$ times	$3\frac{1}{2}$ times
5. Width of the head to depth of the head ...	Width of the head is more than half of its own depth	Width of the head is just half of its own depth
6. Diameter of eye in length of the head ...	4 to $4\frac{1}{2}$ times	5 times
7. The bands on the body ...	The bands do not surround the body.	The bands completely surround the body.

The main point of difference between *Botia striata* (Rao) and *Botia striata* (kolhapurensis) found at Kolhapur is in the size. From the collection of about 6750 specimens of *B. striata* (kolhapurensis) at different times of the year, the maximum size of the fish recorded is 57 mm. whereas *Botia striata* (Rao) is said to grow more than 90 mm. In view of this sharp difference, we are inclined to regard this as a new variety of *Botia striata*.

***Aplocheilus lineatus* (Cuv. & Val.)**

D. 8-9; P. 15; A. 17-19; L. 1. 34. 36; L. tr.9.

The specimens of *Aplocheilus lineatus* at Kolhapur are more slender than those described by Day. Even in fresh specimens the proportion of height to the total length was 1:6 while Day has stated it to be

1:5—5 $\frac{1}{4}$. Slight variation is also found in the number of anal rays and scales in the lateral line. Presence of a distinct black spot at the base in the middle of the dorsal fin as found in the specimens collected at Kolhapur has not been mentioned by Day in his description of *A. lineatus*.

Day states that fishes belonging to the genus *Aplocheilus* are mostly found in the neighbourhood of the sea or tidal river. It is, therefore, interesting to find the aforesaid specimen in the river Bhogavati near Radhanagari at an altitude of about 2,250 ft. above sea level. Similar observations on the occurrence of *A. lineatus* at high altitudes were made in Madras State (Chacko & Ganapati 1949).

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